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BAKER BOTTS L.L.P.  
2001 ROSS AVENUE  
SUITE 600  
DALLAS, TX 75201-2980

EXAMINER

MATTIS, JASON E

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/042,914

Applicant(s)

SMITH ET AL.

Examiner

Jason E. Mattis

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20, 22-27 and 29-33 is/are rejected.
- 7) ☒ Claim(s) 21 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/8/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because they omit an element described in the detailed description. More specifically, a memory 203 is described on page 11 of the specification as being shown in Figure 2; however, there is no item labeled memory 203 in Figure 2. It is recommended that Figure 2 be changed to include the described memory 203.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 9, 19, and 21 objected to because of the following informalities:

Claim 9 contains the limitation "the second network device". There is no prior mention of "a second network device" in claim 7, which claim 9 depends on; however, claim 7 does mention a "remote device". It is recommended that "the second network device" be changed to "the remote device" in claim 9.

Claim 19 contains limitations including "the first portion of the header" and "the second portion of the header". These limitations refer to limitations that are found in claim 18 and not found in claim 17, which claim 19 depends on. It is recommended that claim 19 be amended to depend on claim 18 so that there is proper antecedent basis for the above quoted limitations.

Claim 21 is missing a period (".") at the end of the claim. It is recommended that a period be added to the end of this claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-4, 7, 9, 11, 13-14, 16-18, 20, 22-24, 26-27, 29-31, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Huang (U.S. Pat. 6618397).

**With respect to claims 1, 11, and 16, Huang discloses a system and method for compressing packets (See column 7 lines 22-39 of Huang for reference to a system and method for group packet encapsulation and compression). Huang also discloses that the method and system is implemented as logic embedded in a computer readable medium (See column 7 lines 49-64 of Huang for reference to the system functionality being implemented in software running on a device such as a personal computer). Huang further discloses receiving at a first network device a plurality of packets with each packet being from a separate one of a group of media streams (See column 8 lines 9-25 and Figures 5B and 6 of Huang for reference to receiving packets at GIEC Node-X 602, which is a first network device, with the packets being from different media streams each having a common GIEC node in the streams). Huang also discloses each packet comprising a payload and a header (See column 11 lines 34-47 and Figures 7A-C of Huang for reference to each packet received at a GIEC node including both a payload and a header). Huang further discloses generating a group packet including a group identifier (See column 8 lines 26-49 and Figures 5B and 6 of Huang for reference to combining packets**

into an encapsulation GIEC packet, which is a group packet, in step 556, compressing packet headers in step 558, and adding a GIEC header, which contains a group identifier, to the packet in step 560). Huang also discloses that the group packet includes a payload of each of the packets (See column 8 lines 26-49, column 11 line 48 to column 13 line 5, and Figures 7D-F of Huang for reference to the encapsulation GIEC packet being in the different possible formats shown in Figures 7D-F with each format including the payloads of each of the encapsulated packets). Huang further discloses communicating the group packet to a second network device (See column 8 lines 26-49 and Figures 5B and 6 of Huang for reference to transmitting the packet to a destination GIEC Node-Y 604, which is a second network device).

With respect to claim 7, Huang discloses a communication device (See column 7 line 65 to column 8 line 8 and Figure 5A of Huang for reference to a node 500, which is a communication device). Huang also discloses a first interface operable to receive a plurality of packets with each packet being from a separate one of a group of media streams (See column 7 line 65 to column 8 line 25 and Figures 5A-B and 6 of Huang for reference to using a transmit/receive interface 510 of the node 500 to receive packets at GIEC Node-X 602, which is a first network device, with the packets being from different media streams each having a common GIEC node in the streams). Huang further discloses each packet comprising a payload and a header (See column 11 lines 34-47 and Figures 7A-C of Huang for reference to each packet received at a GIEC node including both a payload and a header).

Huang also discloses a grouping module operable to generate a group packet comprising a group identifier (**See column 8 lines 26-49 and Figures 5A-B and 6 of Huang for reference to using both encapsulation module 534 and compression module 536, which act together as a grouping module, to combine packets into an encapsulation GIEC packet, which is a group packet, in step 556, compress packet headers in step 558, and add a GIEC header, which contains a group identifier, to the packet in step 560**). Huang further discloses that the group packet includes a payload of each of the packets (**See column 8 lines 26-49, column 11 line 48 to column 13 line 5, and Figures 7D-F of Huang for reference to the encapsulation GIEC packet being in the different possible formats shown in Figures 7D-F with each format including the payloads of each of the encapsulated packets**). Huang also discloses a second interface operable to communicate the group packet for receipt by a remote device (**See column 8 lines 26-49 and Figures 5B and 6 of Huang for reference to using transmit/receiver interface 510, which acts as a second interface, to transmit the packet to a destination GIEC Node-Y 604, which is a remote device**).

With respect to claims 3, 9, and 13, Huang discloses generating a group setup message comprising the group identifier and state information for each media stream and communicating the group setup message to the second or remote network device (**See column 9 lines 6-45 and Figure 6 of Huang for reference to each GIEC node including an association file 626 or 628 that includes a group identifier for the connections from another GIEC node and also includes a protocol association for**

**the encapsulation and compression schemes used by each packet encapsulated in the encapsulation packet, which is state information for each media stream, and for reference to the association files being transmitted between two communication nodes prior to sending encapsulation packets between the nodes).**

**With respect to claims 4 and 14, Huang discloses that the state information enables the second network device to reconstruct the headers of the payloads in the group packet and reform the corresponding packets from the reconstructed headers and corresponding payloads (See column 8 lines 26-49, column 9 lines 6-45, and Figures 5B and 6 of Huang for reference to using the information in the association file 626 or 628 to determine how to decompress the compressed headers of the encapsulation packet in step 566 and to determine how de-encapsulate and ungroup the packets to reform the corresponding packets).**

**With respect to claims 17, 30, and 33, Huang discloses a system and method for decompressing packets (See column 7 lines 22-39 of Huang for reference to a system and method for group packet encapsulation and compression and the corresponding method for group packet de-encapsulation and decompression).** Huang also discloses that the method and system is implemented as logic embedded in a computer readable medium **(See column 7 lines 49-64 of Huang for reference to the system functionality being implemented in software running on a device such as a personal computer).** Huang further discloses receiving a group setup message comprising a group identifier and state information for each media stream **(See column**



**9 lines 6-45 and Figure 6 of Huang for reference to each GIEC node including an association file 626 or 628 that includes a group identifier for the connections from another GIEC node and also includes a protocol association for the encapsulation and compression schemes used by each packet encapsulated in the encapsulation packet, which is state information for each media stream, and for reference to the association files being transmitted between two communication nodes prior to sending encapsulation packets between the nodes). Huang also discloses receiving a group packet comprising the group identifier (See column 8 lines 26-49 and Figures 5B and 6 of Huang for reference to receiving an encapsulation packet in step 564 that has been processed by combining packets into an encapsulation GIEC packet, which is a group packet, in step 556, compressing packet headers in step 558, and adding a GIEC header, which contains a group identifier, to the packet in step 560). Huang also discloses that the group packet includes a payload of each of the packets (See column 8 lines 26-49, column 11 line 48 to column 13 line 5, and Figures 7D-F of Huang for reference to the encapsulation GIEC packet being in the different possible formats shown in Figures 7D-F with each format including the payloads of each of the encapsulated packets). Huang further discloses using the state information to reconstruct the headers of the payloads in the group packet and combine the reconstructed header with the corresponding payload to form a reconstructed packet (See column 8 lines 26-49, column 9 lines 6-45, and Figures 5B and 6 of Huang for reference to using the information in the association file 626 or 628 to determine**

**how to decompress the compressed headers of the encapsulation packet in step 566 and to determine how de-encapsulate and ungroup the packets to reform the corresponding packets).**

**With respect to claim 23, Huang discloses a communication device (See column 7 line 65 to column 8 line 8 and Figure 5A of Huang for reference to a node 500, which is a communication device). Huang also discloses a memory operable to store a group setup message comprising a group identifier and state information for each media stream (See column 9 lines 6-45 and Figure 6 of Huang for reference to each GIEC node including an association file 626 or 628 in a memory that includes a group identifier for the connections from another GIEC node and also includes a protocol association for the encapsulation and compression schemes used by each packet encapsulated in the encapsulation packet, which is state information for each media stream, and for reference to the association files being transmitted between two communication nodes prior to sending encapsulation packets between the nodes). Huang further discloses an interface operable to receive a group packet comprising the group identifier (See column 7 line 65 to column 8 line 49 and Figures 5B and 6 of Huang for reference to receiving at transmit/receive interface 510 an encapsulation packet in step 564 that has been processed by combining packets into an encapsulation GIEC packet, which is a group packet, in step 556, compressing packet headers in step 558, and adding a GIEC header, which contains a group identifier, to the packet in step 560). Huang also discloses that the group packet includes a payload of each of**

the packets (See column 8 lines 26-49, column 11 line 48 to column 13 line 5, and Figures 7D-F of Huang for reference to the encapsulation GIEC packet being in the different possible formats shown in Figures 7D-F with each format including the payloads of each of the encapsulated packets). Huang further discloses a processor operable to reconstruct the headers of the payloads in the group packet and combine the reconstructed header with the corresponding payload to form a reconstructed packet (See column 8 lines 26-49, column 9 lines 6-45, and Figures 5B and 6 of Huang for reference to using both encapsulation module 534 and compression module 536, which act as a processor using the information in the association file 626 or 628 to determine how to decompress the compressed headers of the encapsulation packet in step 566 and to determine how de-encapsulate and ungroup the packets to reform the corresponding packets).

With respect to claims 18, 24, and 31, Huang discloses determining a first portion of the header based on the state information (See column 9 lines 6-45, column 11 line 48 to column 13 line 5, and Figures 7D-F of Huang for reference to using the association file 626 or 628 to determine the protocol format used to encapsulate the packets such the heads of each encapsulated packets can be located according to the protocol used as shown in Figures 7D-F). Huang also discloses determining a second portion of the header by applying decompression to the first portion of the header (See column 8 lines 26-49 and Figure 5B of Huang for reference to decompressing the located headers in step 566). Huang further discloses reconstructing the header from the first in second portions (See column 8

**lines 26-49 and Figure 5B for reference to using the compressed header to reconstruct the header and reform the originally encapsulated packets by ungrouping the packets in steps 568 and 570).**

**With respect to claims 20 and 26, Huang discloses that the group packet includes the group setup message by including the group identifier and the state information (See column 11 line 48 to column 13 line 5 and Figure 7E of Huang for reference to the encapsulation packet, as in the embodiment of Figure 7E, including an IP header, which includes the group identifier, and also including HC headers for each packet that includes information about the compression used on each header of each packet in the encapsulation packet, such that the group setup message is included in the group packet).**

**With respect to claims 22 and 29, Huang discloses receiving updated state information and updating the corresponding state information (See column 9 lines 28-45 of Huang for reference to updating association information dynamically between two communication nodes by transmitting updated information between the nodes).**

**With respect to claim 27, Huang discloses that the interface is operable to receive a group setup message comprising the group identifier and the state information (See column 9 lines 6-45 of Huang for reference to transmitting the association information between nodes with the nodes using the transmit/receive interface 510 to receive association information).**

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Graves et al. (U.S. Pat. 4764921).

**With respect to claims 2, 8, and 12**, Huang does not disclose that each media stream is synchronous and identifying a group by determining that the streams have the same periodicity.

**With respect to claims 2, 8, and 12**, Graves et al., in the field of communications, discloses synchronous media streams and identifying a group by determining that the streams have the same periodicity **(See column 5 lines 15-22 of Graves et al. to determining that a plurality of synchronous data streams with the same periodicity may be multiplex, or grouped, into a single signal)**. Using synchronous media streams and identifying a group by determining that the streams have the same periodicity has the advantage of allowing data that is arriving at a node the same rate and time to be transmitted from the node in a combined signal such that multiple data streams are combined into a single easier to manage data stream.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Graves et al., to combine using synchronous media streams and identifying a group by determining that the streams have the same periodicity, as suggested by Graves et al., with the system and method of Huang, with the motivation being to allow data that is arriving at a node the same rate and time to be transmitted from the node in a combined signal such that multiple data streams are combined into a single easier to manage data stream.

7. Claims 5, 15, 19, 25, and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Tang et al. (U.S. Publication 2001/0025321 A1).

**With respect to claims 5, 15, 19, 25, and 32**, although Huang does disclose packets that are IP packets carried over UDP (**See column 7 lines 40-48 of Huang for reference to using IP/UDP packets**), and Huang does disclose compressing packet headers for transmission and decompressing the headers on reception, Huang does not disclose compressing each packet into a compressed UDP packet at the transmitting node and decompressing the cUDP packet at the receiving node.

**With respect to claims 5, 15, 19, 25, and 32**, Tang et al., in the field of communications, discloses compressing packets to be sent as a group packet into cUDP packets and decompressing the cUDP packets upon reception (**See page 2 paragraph 23 of Tang et al. for reference to compressing and decompressing packets to and from cUDP packets**). Compressing packets to be sent as a group packet into cUDP packets and decompressing the cUDP packets upon reception has

the advantage of using a well know and established compression protocol to reduce the amount of information of a packet and thus the bandwidth needed to send the packet over a communication link between nodes.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Tang et al., to combine compressing packets to be sent as a group packet into cUDP packets and decompressing the cUDP packets upon reception, as suggested by Tang et al., with the system and method of Huang, with the motivation being to use a well know and established compression protocol to reduce the amount of information of a packet and thus the bandwidth needed to send the packet over a communication link between nodes.

8. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Tezuka et al. (U.S. Publication US 2001/0014105 A1).

**With respect to claims 6 and 10**, Huang does not specifically disclose multiplexing group packets into a multiplexed packet.

**With respect to claims 6 and 10**, Tezuka et al., in the field of communications, discloses multiplexing group packets into a multiplexed packet **(See page 1 paragraph 7 of Tezuka et al. for reference to creating an ATM cell, which is a group packet, out of packets transmitted in different streams and for reference to multiplexing multiple ATM cells together to form multiplexed packet)**. Multiplexing group packets into a multiplexed packet has the advantage of allowing large groups of packets

to be transmitted from the node in a combined signal such that multiple data streams are combined into a single easier to manage data stream.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Tezuka et al., to combine multiplexing group packets into a multiplexed packet, as suggested by Tezuka et al., with the system and method of Huang, with the motivation being to allow large groups of packets to be transmitted from the node in a combined signal such that multiple data streams are combined into a single easier to manage data stream.

### ***Allowable Subject Matter***

9. Claims 21 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jem



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600